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ABSTRACT

In order to discover the effects of success and failure on subsequent aggressiveness, 26 male and 55 female college students were randomly assigned to success, failure, and neutral conditions. Those in the success condition were led to feel they were superior to other college students on a task, those in the failure condition were led to feel they were inferior, and those in the neutral condition were given no basis for judgement. After subsequently being insulted by E, Ss filled out a questionnaire indicating their opinion of the study, as the dependent measure of aggression. Rating scale evaluations showed no significant differences, but Ss in the failure condition chose "frustrating" and also other unfavorable adjectives to describe the study significantly more than those in the other two conditions. The results supported the prediction that failure would increase aggressiveness but not the hypothesis that the "warm glow of success" would inhibit aggression. (Author)

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Success, Failure, and Aggression

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A. Introduction

A large number of conditions have been suggested as increasing the level of subsequent aggressive behavior, including frustration, general arousal, modeling of aggressive responses, physical assaults, pain, verbal threats and insult, cessation of reinforcement, thwarting of goal directed behavior, and instructions to aggress, among others (1,4). Other factors have been suggested as possible inhibitors of aggression, such as pain cues from the victim, guilt and anxiety, lack of reinforcement for aggression, modeling of non-aggressive responses, sometimes direct or vicarious punishment for aggression, self punishment for aggression, reinforcement for non-aggressive activities, and empathy for or identification with the victim of aggression(1,4,8). The present study was designed to look at the effect of failure and success on several tasks upon subsequent aggression. In a study by Nelson, Gelfand, and Hartmann(7) children participated in competitive games and either won (succeeded) or lost (failed). Children in a control group played noncompetitive games. Half of the children in each group subsequently viewed an aggressive M and half a nonaggressive M. Almost no aggression was displayed by those seeing a non-aggressive M, but among those seeing an aggressive M, those who experienced failure were more aggressive than those who experienced success, while those who experienced success were more aggressive than those who participated in the noncompetitive games. The

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increased aggressiveness of the winners over the control Ss may have been due to the competitive nature of the game, which might have rewarded aggressiveness. Some evidence for this point is provided by Christy, Gelfand, and Hartmann(2), who found that participants in competitive games were subsequently more aggressive than participants in noncompetitive games. In both these studies the lack of aggressiveness by Ssin the nonaggressive model condition might have been due either to the potency of a nonaggressive model or to the fact that there was no instigation to aggression in that condition.

The present study differed from the Nelson et.al.one in a number of respects. The Ss were adults rather than children, and the instigator of aggression was insult rather than exposure to an aggressive model. Moreover, the situation was a noncompetitive one in which no possible reinforcement for aggressive responses could have been delivered to the Ss. Failure in the present study was private rather than public. In both this and the Nelson, et. al. study, however, the experience of failure could have been viewed as a type of frustration, both in that the goal of completing the tasks (or winning) was not obtained and in that the failure could serve to lower S's self esteem and status. More interesting is the role of success.

Isen (5) has suggested that the experience of success leads to a "warm glow" which subsequently leads to both greater self-reward and greater generosity toward others. Isen, Horn, & Rosehan (6) have summarized the substantial evidence that success leads

to subsequent altruistic behavior and indicate that " the good feeling seems to extend to others also." Failure, on the other hand, seemed to promote generosity only if it would lead to repairing their public image, that is, if both the failure and reparation were public. Based on these findings and the noncompetitive nature of the task, it was predicted that Ss who were successful on a task would subsequently be less aggressive and Ss who had failed on a task would subsequently be more aggressive than Ss who neither succeeded nor failed.

B. Method

1. Subjects

Ss were twenty eight male and fifty six female students in two education courses and one undergraduate interpersonal relations course. They were randomly assigned to conditions within classes by randomly ordered booklets.

2. Materials

There were three forms of the booklets, typed to look almost identical except at close glance. The cover page on all forms indicated that this was a test to gather normative ability on students' decoding and cryptoanalytic abilities. The success form stated, in addition, that the typical college student took 120 minutes to finish the test; the failure form stated that the typical college student took 20 minutes. The neutral form had no such statement. Ss were told to put their sex but not their name on the booklet.

Each booklet consisted of a series of five tasks: a scrambled word task, a scrambled sentence task, a decoding task and two symbol matching tasks. For each part of every task two matching questions of varying difficulty were constructed. For instance, the

word appetite was coded as"apeittep"in the easy version and as "piteepat" in the hard one. Ss in the success condition received a booklet with all the easy tasks; those in the failure condition received a booklet with all the hard problems; and those in the neutral condition received a booklet with a randomly chosen half of the questions for each task in the easy version and half in the difficult version.

The last page of the booklet was identical for Ss in all conditions. It was typed on an obviously different typewriter and comprised the dependent measure. The first side of the page was headed "Research Project Evaluation Form." It contained spaces for a project number and name of the researcher, which were filled in in pen. Following this was a paragraph explaining the form as a device to evaluate the research projects carried out in the department. It was further explained that the results of the evaluation would be transmitted to the researcher with the aim of improving the caliber of the research projects conducted. The rest of the page contained six questions involving the S's opinion of the scientific importance and interest of the study, value for him personally, and rating of the researcher's competence, courtesy, and attitude. The second page contained two more questions, one concerning the adequacy of the explanation of the study and one asking whether the S would be willing to participate in similar studies. The questions were rated on a seven point scale, seven being an extremely favorable rating and one being an extremely unfavorable rating. The last question requested that the S circle three adjectives from a list of twenty which they felt

best described the study. The list consisted of twelve favorable adjectives like "valuable", "informative", etc., seven unfavorable adjectives like "frustrating", "stupid" etc., and the adjective "neutral." The rest of the page was reserved for any other comments the S might have. It was felt that a low rating of the study would serve as a measure of aggressive responding.

3. Procedure

Three male graduate sudents in education served as Es, one in each class. E entered the classroom, introduced himself and said that he was gathering normative data on crytpoanalytic abilities in college students. After telling the students that they were not required to participate, that no one would have time to finish the test, and that they were requested to attempt each item before progressing to the next and not to communicate with anyone else, he passed out the booklets.

After twelve minutes had passed, E motioned to the Ss to hand in their papers and delivered the following insulting speech, varied slightly in vocabulary to suit each E.

> " Okay, Okay, stop, your time is up. Come on, quit it already. Well, okay, I guess I have to explain to you what this is all about.
>
> I dnn't know why they think subjects have to be told all about experiments, anyway. You probably couldn't care less, even if you really could understand what it's all about. Anyway, you see, we already have some scores from regular courses and students but we thought it would be a good idea to get some idea of how the kind of students who take gut---uh, I mean easy--- courses do. You know? I mean, well students who take rinky dink courses like (these education ones instead of majoring in a real subject area) (this interpersonal relations instead of a real psychology course) probably aren't going to do as well on tasks that take intellectual ability as regular students. I don't mean to say you're dumb or anything, of course, just maybe lazy---well, anyway that's why we wanted stuff from you. Well, anyway, any questions?"

If no questions were asked, E responded, " I didn't think you'd be able to think of any. Well, come on, can't you think of anything?" If questuons were asked, he said, " I might have expected something like that." Finally, he stated,

> " One more thing, the Educational Foundations Research Staff

wants you to fill out this stupid questionnaire because they're so concerned about whether your valuable time is being wasted. Come on, fill it out--I know it's a bunch of junk, but I've got to do it anyway."

The questionnaires were then collected, and a lengthy debriefing was conducted, including apologies for the deception and insult and an assurance that the test measures nothing at all and that the researchers have no evidence of intellectual or motivational differences between people in different courses.

C. Results

Twenty-six male and fifty-five female Ss filled out the first page of the questionnaire, but only twenty males and forty-two females filled out the back. For that reason, the ns for the analyses of the adjectives chosen are smaller than those for the analyses of variance.

Effectiveness of the manipulation. An analysis of variance of the number of correct answers in the three conditions indicated a significant difference ($F = 6.144$, $df = 2,84$, $p < .01$). Subsequent post hoc Scheffé comparisons showed that Ss in the success condition ($\bar{X} = 48.38$) had a higher mean score than those in the neutral condition ($\bar{X} = 35.78$, $F = 8.86$, $p < .05$), who in turn had a higher mean than those in the failure condition ($\bar{X} = 9.23$, $F = 8.86$, $p < .05$).

Rating Scales. Answers to the questions were scored from 1 to 7 with 1 indicating a more aggressive response or less favorable attitude toward the study. The mean and standard deviation of the responses to each question were calculated for those 48 Ss who answered all eight questions, and those who did not were

assigned a score on those questions they failed to answer which was equivalent to their standard score on those questions they did answer. Thus if someone averaged 1.5 s above the mean on the seven questions he answered, he was assigned a score equivalent to 1.5 s above the mean for question eight. Each S's score was summed across all eight questions to provide a total measure of aggressiveness, which could range from 7-56.

The mean scores for male Ss in the success, neutral, and failure conditions were 30.08, 32.98 and 29.55, respectively; the corresponding means for females were 31.52, 32.02 and 30.20. A 3x2 unweighted means analysis of variance of these scores revealed no significant treatment ($F < 1$, $df = 2, 78$, $p > .05$), sex ($F < 1$, $df = 1, 78$, $p > .05$) or interaction effects ($F < 1$, $df = 2, 78$, $p > .05$).

Choice of adjectives. 50 % of the Ss in the failure condition, 45 % of those in the neutral condition, and 10 % of those in the success condition chose "frustrating" as an adjective to describe the study, indicating again that the manipulation was successful ($\chi^2 = 6.59$, $df = 2$, $p < .05$).

Excluding choices of "frustrating" or "neutral", the percentages of the other six unfavorable adjectives as compared with the twelve favorable ones chosen by Ss in the success (24 %), neutral (25 %) and failure (52 %) conditions were significantly different ($\chi^2 = 9.644$, $df = 2$, $p < .01$). Ss in the success ($\chi^2 = 5.958$, $df = 1$, $p < .05$) and the neutral ($\chi^2 = 5.61$, $df = 1$, $p < .05$) conditions chose lower percentages of unfavorable adjectives than those in the failure condition, but they did not differ significantly from each other. Female Ss alone showed significantly different percentages of unfavorable adjectives chosen in the success (17%)

neutral (19%) and failure (47%) conditions ($\chi^2 = 9.113$, $df = 2$ $p < .05$), with both the success ($\chi^2 = 4.495$, $df = 1$, $p < .05$) and neutral conditions ($\chi^2 = 4.39$, $df = 1$, $p < .05$) differing from the failure condition, but the former two not differing from each other. Male Ss showed the same trend in the percentages of unfavorable adjectives chosen in the success (32%), neutral (36%), and failure (67%) conditions, but no differences between conditions were statistically significant, due to the smaller number of subjects. No significant differences between males and females were found, and the overall percentage of 32.8% of unfavorable adjectives chosen was almost identical to the 33.3% expected on the basis of chance.

D. Discussion

Although the analysis of the rating scale did not show any differences between the groups, one cannot conclude that the treatment was ineffective, since significant differences did appear in the analysis of the choice of adjectives from part two of the questionnaire. Since the increasing number of correct answers and decreasing choices of the term "frustrating" from the failure to neutral to success conditions indicate that the manipulation was effective and since significant results were obtained using the adjective choice part of the questionnaire, the disappointing results of the analysis based on the rating scale could be attributed to a lack of sensitivity of the instrument. This might have been due to a reluctance on the part of the Ss to rate a scientific study in a derogatory manner and to directly criticize the

researcher. Preliminary results from another study (2) using this instrument, however, make this unlikely. It is also possible that the insult was so effective it aroused all Ss equally, erasing any effects that might have appeared in the measure.

Analysis of the adjective choices indicates, as predicted, that those in the failure condition were more aggressive than those in the neutral or success conditions, confirming the results of Nelson et. al. (7) and the frequent finding of frustration increasing subsequent aggressiveness. The lack of significant differences between the success, and neutral conditions, however, suggest that Isen's "warm glow of success" (5,6), if it exists, is not sufficient to inhibit aggressive responding. Nor were the Nelson et.al.(7) findings of greater aggressiveness in the success condition confirmed, of course. One reason for this lack of difference might be that those in the neutral condition were also feeling successful, since they had completed a fairly large number of problems. It seems less likely that those in the success condition were not feeling successful, since almost all had completed a majority of the tasks in twelve minutes, whereas the typical college student was supposed to take 120 minutes to finish. However, since they did not finish all the questions, it is possible they they were experiencing some frustration from not being able to complete the test.

A possible interpretation of the data is that choosing words like "boring" and "noxious" to describe the experiment was not viewed by the Ss as an aggressive act but rather as an accurate

view of their feelings. However, the questionnaire was worded to make it appear that the researcher would be questioned if his experiment was viewed as a waste of time by the Ss, and several Ss expressed antagonism toward the E in verbal comments or additional remarks written on their booklet, suggesting that they were indeed angry. Choosing "unfavorable" words to describe the study, therefore, could certainly be viewed as an easy way to attack or "get back at" the E.

The results of the present study, therefore, provide some evidence that failure increases subsequent aggressiveness and contradict the Nelson et.al.(7) result of success also increasing aggressiveness. Possibly because of the failure of the "neutral" or "success" manipulations there was no evidence of a "warm glow of success" sufficient to inhibit subsequent aggressiveness. Further research with a more sensitive manipulation and instrument might cast more definitive light on this subject.

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FOOTNOTE

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